

**WE CLAIM:**

1. A sensor strip for determining the concentration of an analyte in a sample, the sensor strip comprising:
  - (a) a first substrate having a proximal end and an opposite distal end, the distal end being configured and arranged for insertion into a sensor reader, the first substrate defining a first side edge and a second side edge of the sensor extending from the proximal end to the distal end of the first substrate;
  - (b) a second substrate positioned over the first substrate;
  - (c) at least one working electrode on the first substrate; and
  - (d) at least one counter electrode on one of the first substrate and the second substrate, with a portion of the counter electrode located 25-1000 micrometers from a portion of the at least one working electrode.
  - (e) a spacer between the first and second substrates defining:
    - (i) a first aperture along the proximal end of the sensor, and
    - (ii) a sample chamber extending from the first aperture to the second aperture, the sample chamber comprising a measurement zone having a volume of no more than 1 microliter, and the sample chamber defining a recess having at least a portion of the working electrode and a redox mediator situated in the recess.
2. The sensor strip according to claim 1 wherein the sample chamber recess is a circular recess.
3. The sensor strip according to claim 1 wherein the at least one working electrode comprises a material selected from the group consisting of gold, carbon, platinum, ruthenium dioxide, and palladium.
4. The sensor strip according to claim 1 wherein the at least one counter electrode

comprises a material selected from the group consisting of gold, carbon, platinum, ruthenium dioxide, and palladium.

5. The sensor strip according to claim 1 wherein the spacer has a thickness of no more than 0.2 mm.

6. The sensor strip according to claim 1 wherein the at least one working electrode has a working area of no more than about 0.01 cm<sup>2</sup>.

7. The sensor strip according to claim 1 further comprising at least one indicator electrode on at least one of the first and second substrates and positioned relative to the sample chamber to determine when the sample chamber contains sample.

8. The sensor strip according to claim 1 having a portion of the counter electrode located no more than 200 micrometers from a portion of the at least one working electrode.

9. The sensor strip according to claim 1 having a measurement zone having volume of no more than 0.5 microliter.

10. The sensor strip according to claim 9 having a measurement zone having a volume of no more than 0.2 microliter.

11. The sensor strip according to claim 1, wherein the redox mediator is a diffusible redox mediator.

12. The sensor strip according to claim 1, wherein the redox mediator comprises an osmium redox mediator.

13. The sensor strip according to claim 1, further comprising an analyte-responsive enzyme in the recess.
14. The sensor strip according to claim 1, further comprising a second working electrode on the first substrate.
15. The sensor strip according to claim 1, wherein the analyte is glucose and the sample is blood.
16. A sensor strip for determining the concentration of an analyte in a sample, the sensor strip comprising:
  - (a) a first substrate having a proximal end and an opposite distal end, the distal end being configured and arranged for insertion into a sensor reader, the first substrate defining a first side edge and a second side edge of the sensor extending from the proximal end to the distal end of the first substrate;
  - (b) a second substrate positioned over the first substrate;
  - (c) at least one working electrode comprising gold on the first substrate; and
  - (d) at least one counter electrode comprising gold on the first substrate, with a portion of the counter electrode located 25-1000 micrometers from a portion of the at least one working electrode.
  - (e) a spacer layer between the first and second substrates defining:
    - (i) a first aperture along the proximal end of the sensor, and
    - (ii) a sample chamber extending from the first aperture to the second aperture, the sample chamber comprising a measurement zone having a volume of no more than 1 microliter, and the sample chamber defining a recess having at least a portion of the working electrode and a redox mediator situated in the recess.

17. The sensor strip according to claim 16 wherein the sample chamber recess is a circular recess.
18. The sensor strip according to claim 16 wherein the spacer layer has a thickness of no more than 0.2 mm.
19. The sensor strip according to claim 16 having a portion of the counter electrode located no more than 200 micrometers from a portion of the at least one working electrode.
20. The sensor strip according to claim 16 having a measurement zone having volume of no more than 0.5 microliter.
21. The sensor strip according to claim 20 having a measurement zone having a volume of no more than 0.2 microliter.